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X-ray unit for the generation of brief X-ray pulses and inspection device operating with such an X-ray unit

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A B S T R A C T

The X-ray unit for the generation of brief X-ray pulses contains an X-ray tube (10) which has a thermionic cathode (12) and an anode (16) and an X-ray generator which has a first circuit (22, 20, 18) for the generation of a high-voltage pulse which is applied to the anode (16) for the generation of the X-ray pulse. The X-ray generator contains a second circuit (26) via which a low voltage is permanently applied to the anode (16) which is not sufficient for the generation of X-radiation (30) and pre-heats the X-ray tube (10). The first circuit can have a high-voltage power supply unit (22) which charges a high-voltage capacitor (20) which can be applied to the anode (16) via a high-voltage switch (18). The second circuit can be a Marx generator. There may be only one power supply, which both generates the permanently low voltage and also drives the Marx generator for the generation of the high voltage. The X-ray unit can be part of a device for the inspection of objects which has an imaging apparatus (44, 46) for the generation of an image of the object by means of the X-ray (30).

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